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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/076,909	02/13/2002	Richard Meyer	20949P-000500US	1886
48102	7590	02/17/2006	EXAMINER	
NETWORK APPLIANCE/BLAKELY 12400 WILSHIRE BLVD SEVENTH FLOOR LOS ANGELES, CA 90025-1030			KUIPER, ERIC J	
			ART UNIT	PAPER NUMBER
			2154	
DATE MAILED: 02/17/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/076,909

Applicant(s)

MEYER ET AL.

Examiner

Eric Kuiper

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1-20 have been presented for examination.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Muller et al. (US 6,247,077, hereinafter Muller).

4. As per claim 1, Muller discloses a storage management device for exchanging data between a plurality of computer users and a plurality of storage devices (e.g. col. 4, lines 13-21; Fig. 1; Fig. 2), the storage management device comprising:

one or more control modules (e.g. compute nodes), each having one or more first data ports (e.g. col. 4, lines 39-53; Fig. 2, element 200);

one or more storage control modules (e.g. I/O nodes or IONs), each having one or more second data ports (e.g. col. 4, lines 57-64; Fig. 2, elements 212, 214);

one or more data stores (e.g. col. 4, lines 57-64; Fig. 2, elements 218, 222);

a switch fabric configured to selectively exchange data among said first data ports and said second data ports, some of said first data ports and said second data ports receiving and

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transmitting data with said computer users, others of said first data ports and second data ports receiving and transmitting data with said storage devices (e.g. col. 4, lines 13-21; Fig. 2);

first program code (e.g. application instructions) adapted to execute on each of said one or more control modules (e.g. col. 4, lines 50-53);

second program code (e.g. physical disk drivers) adapted to execute on each of said one or more storage control modules (e.g. col. 5, lines 23-31);

said first program code comprising:

a first code component configured to operate one of said control modules to issue a request for device information (e.g. col. 25, lines 59-67; col. 26, lines 1-7);

a second code component configured to operate one of said storage control modules to receive said request for device information and in response thereto to obtain device information corresponding to one or more of said one or more storage devices, said device information being stored in said one or more data stores (e.g. col. 27, lines 5-27); and

a third code component configured to operate one of said control modules to receive said device information and in response thereto to initialize, characterize, and profile said corresponding storage devices (e.g. col. 26, lines 32-56).

5. As per claim 2, Muller discloses the device of claim 1 wherein said one or more storage control modules each includes a plurality of storage processing units (e.g. JBOD/SCSI configuration modules), each of said storage processing units comprising one or more of said second ports (e.g. col. 11, lines 10-21, 40-44), said second code component comprises:

a first code portion configured to operate one of said storage control modules to receive said request for device information and in response thereto to communicate said request to each storage processing unit (e.g. col. 12, lines 4-16); and

a second code portion configured to operate one of said storage processing units to receive said request and in response thereto to communicate via said one or more of said second ports to obtain said device information (e.g. col. 12, lines 4-16).

6. As per claim 3, Muller discloses the device of claim 1 wherein said second code component is further configured to operate one of said storage control modules to obtain path information, said path information identifying data paths between said second data ports and said storage devices, said path information being stored in said one or more data stores (e.g. col. 45, lines 23-32).

7. As per claim 4, Muller discloses the device of claim 3 wherein said second code component is further configured to operate one of said storage control modules to detect changes in said path information, said changes in said path information being stored in said one or more data stores (e.g. col. 45, lines 32-51).

8. As per claim 5, Muller discloses the device of claim 1 wherein said second code component is further configured to operate one of said storage control modules to detect addition of a storage device (e.g. col. 26, lines 32-56).

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9. As per claim 6, Muller discloses the device of claim 5 wherein said second code component is further configured to operate one of said storage control modules to detect removal of a storage device (e.g. col. 26, lines 57-67; col. 27, lines 1-3).

10. As per claim 7, Muller discloses the device of claim 1 wherein said second code component is further configured to operate one of said storage control modules to detect addition of one or more data coupling devices, said data coupling devices effective for providing a data communication between some of said first and second data ports and some of said storage devices (e.g. col. 26, lines 32-56).

11. As per claim 8, Muller discloses the device of claim 7 wherein said second code component is further configured to operate one of said storage control modules to detect deletion of one or more of said data coupling devices (e.g. col. 26, lines 57-67; col. 27, lines 1-3).

12. As per claim 9, Muller discloses the device of claim 1 wherein said device information includes one or more of reliability information, availability information (e.g. col. 25, Table VIII), a failover policy (e.g. col. 9, lines 65-67; col. 10, lines 29-31), command support capability (e.g. col. 24, lines 3-11), and performance information (e.g. col. 17, lines 20-23).

13. As per claim 10, Muller discloses the device of claim 1 further including a fourth code component configured to operate one of said control modules to receive user-provided information relating to a configuration of virtual storage devices and to associate said storage

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devices to said virtual storage devices based on said device information, wherein each device can be associated with one or more of said virtual devices, wherein each virtual device can be associated with one or more of said devices (e.g. col. 45, lines 11-21).

14. As per claim 11, Muller discloses in a storage management device for exchanging data between a plurality of computer users and a plurality of physical storage devices (e.g. col. 4, lines 13-21; Fig. 1; Fig. 2), the storage management device comprising a plurality of first data ports configured for communication with said computer users (e.g. col. 4, lines 39-53; Fig. 2, element 200), a plurality of second data ports configured for communication with said physical storage devices (e.g. col. 4, lines 57-64; Fig. 2, elements 212, 214), and a switch fabric configured to selectively exchange data among said first data ports and said second data ports (e.g. col. 4, lines 13-21; Fig. 2), a method for managing said physical storage devices comprising:

communicating a request for device information(e.g. col.25,lines 59-67;col. 26,lines 1-7);

obtaining device information corresponding to said physical storage devices (e.g. col. 27, lines 5-27);

based on said device information, initializing said corresponding physical storage devices (e.g. col. 26, lines 32-56);

identifying a plurality of first communications paths between said storage management device and said physical storage devices (e.g. col. 45, lines 23-32);

storing in one or more data stores said device information and path information indicative of said first communication path (e.g. col. 45, lines 23-32)s;

receiving user-provided information relating to a virtual storage configuration (e.g. col. 45, lines 11-21); and

based on said device information and said path information, associating one or more of said physical storage devices to said virtual storage configuration (e.g. col. 45, lines 11-21).

15. As per claim 12, Muller discloses the method of claim 11 wherein said device information includes one or more of reliability information, availability information (e.g. col. 25, Table VIII), a failover policy (e.g. col. 9, lines 65-67; col. 10, lines 29-31), command support capability (e.g. col. 24, lines 3-11), and performance information (e.g. col. 17, lines 20-23).

16. As per claim 13, Muller discloses the method of claim 11 further including detecting changes in said first communications paths and storing information indicative of said changes in said first communications paths in said one or more data stores (e.g. col. 45, lines 32-51).

17. As per claim 14, Muller discloses the method of claim 11 further including detecting addition of a new physical storage device to said physical storage devices (e.g. col. 26, lines 32-56) and removal of one of the said physical storage devices and storing said addition in said one or more data stores (e.g. col. 26, lines 57-67; col. 27, lines 1-3).

18. As per claim 15, Muller discloses the method of claim 11 further including detecting addition of a first data coupling device for coupling said storage management device to one or more of said physical storage devices (e.g. col. 26, lines 32-56) and removal of a second data

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coupling device and storing said removal in said one or more data stores (e.g. col. 26, lines 57-67; col. 27, lines 1-3).

19. As per claim 16, Muller discloses the method of claim 11 further including receiving user-provided information relating to a configuration of virtual storage devices; and associating said physical storage devices to said virtual storage devices based on said device information and said first communication paths, wherein each physical device can be associated with one or more of said virtual devices, wherein each virtual device can be associated with one or more of said physical devices (e.g. col. 45, lines 11-21).

20. As per claim 17, Muller discloses a storage management device for exchanging data between a plurality of computer users and a plurality of physical storage devices (e.g. col. 4, lines 13-21; Fig. 1; Fig. 2) comprising:

- a plurality of first data ports configured for communication with said computer users (e.g. col. 4, lines 39-53; Fig. 2, element 200);

- a plurality of second data ports configured for communication with said physical storage devices (e.g. col. 4, lines 57-64; Fig. 2, elements 212, 214);

- a switch fabric configured to selectively exchange data among said first data ports and said second data ports (e.g. col. 4, lines 13-21; Fig. 2);

- one or more data stores (e.g. col. 4, lines 57-64; Fig. 2, elements 218, 222);

- means for communicating a request for device information (e.g. col. 25, lines 59-67; col. 26, lines 1-7);

means for obtaining device information corresponding to said physical storage devices and for storing said device information in said one or more data stores (e.g. col. 27, lines 5-27);

means for characterizing and profiling said physical storage devices based on said device information (e.g. col. 26, lines 32-56);

means for initializing said corresponding physical storage devices based on said device information (e.g. col. 26, lines 32-56);

means for identifying a plurality of first communication paths between said storage management device and said physical storage devices and for storing information indicative of said first communication paths in said one or more data stores (e.g. col. 45, lines 23-32); and

means for detecting changes in a topology of said physical storage devices and for storing said changes (e.g. col. 45, lines 32-51).

21. As per claim 18, Muller discloses the device of claim 17 further including means for receiving user-provided information relating to a configuration of virtual storage devices; and means for associating said physical storage devices to said virtual storage devices based on said device information and said path information, wherein each physical device can be associated with one or more of said virtual devices, wherein each virtual device can be associated with one or more of said physical devices (e.g. col. 45, lines 11-21).

22. As per claim 19, Muller discloses the device of claim 17 wherein said changes in a topology of said physical storage devices includes addition of one or more new physical storage

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devices (e.g. col. 26, lines 32-56) and removal of one or more of said physical storage devices (e.g. col. 26, lines 57-67; col. 27, lines 1-3).

23. As per claim 20, Muller discloses the device of claim 17 wherein said device information includes one or more of reliability information, availability information (e.g. col. 25, Table VIII), a failover policy (e.g. col. 9, lines 65-67; col. 10, lines 29-31), command support capability (e.g. col. 24, lines 3-11), and performance information (e.g. col. 17, lines 20-23).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Bates et al. (US 6,977,927) teaches a storage area network that uses a fabric switch for interconnecting users with storage devices, where the storage devices can be added and removed and include virtual storage devices.

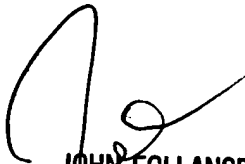
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric Kuiper whose telephone number is (571) 272-0953. The examiner can normally be reached on Monday through Friday, 8:00am to 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Follansbee can be reached on (571) 272-3964. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Eric Kuiper
14 February 2006



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